Methods: 1091 patients with suspected ischemic chest pain underwent a clinically indicated angiography and enrolled in this study. Significant CAD was defined as ≥50% stenosis in any one major epicardial coronary artery. Multivariate logistic regression was used to determine predictors of significant CAD.
Results: More women than men were found with normal/non-significant CAD (44.3% vs. 29.5%), but more men were shown either left-main or three-vessel disease (25.5% vs. 14.2%). Among patients with significant CAD, more women had relatively mild coronary artery lesions (50-74% stenosis) (27.5% vs. 16.5%), more men had the most severity CAD (90-100% stenosis) (65.3% vs. 56.5%). Risk factors independently associated with significant CAD including age, hypertension, diabetes mellitus, and prior myocardial infarction for both genders, LDL-C (>100 mg/dl) was separately for men, and postmenopause was separately for women.
Conclusions: Women referred for angiography are more likely to have normal or non-significant CAD and lower rates of significant CAD compared with men across all ages. Predictors of significant CAD of Chinese population were similar with Western population. It was a fortunate result because measures of CAD primary prevention used in Western countries may be also suitable for China.

GW25-e1493

The Impact of Epicardial Fat Volume and Inflammatory Cytokines on Coronary Artery Disease and Atherosclerotic Plaque Stability

Dong Chen, Jing Wang
Department of cardiology, Jinling Hospital, clinical school of medical college, Nanjing university

Objectives: Epicardial fat is an unusual visceral adipose tissue that is functionally and anatomically related to the coronary arteries and has been reported to be a rich source of various cytokines. Several groups have demonstrated that both epicardial fat and adipokines derived from adipose tissue may directly affect the progression of atherosclerosis. A previous study by our group has indicated that epicardial fat volume (EFV) is an independent predictor of the presence and severity of coronary atherosclerosis; however, the relationships between EFV, cytokine levels, and coronary plaque vulnerability have not been studied extensively. This study aimed to investigate the impact of EFV and cytokines in plasma on coronary plaque stability.
Methods: Patients who were undergoing coronary angiography and dual-source CT were enrolled in the study from February to October 2013. EFV, spot plaque, remodeling index, and low-density plaque were calculated from CT scans using software provided by Siemens Medical Solutions. Fasting blood samples were collected for biochemical examination and cytokine quantitation by ELISA. Statistical analyses were performed using SPSS 19.0.
Results: (1) Compared with those of the non-CAD group, the low-density lipoprotein cholesterol (LDL-C), body mass index (BMI) and EFV of CAD group were significantly higher, while high-density lipoprotein cholesterol (HDL-C) demonstrated the opposite trend (P<0.05). (2) Compared with those of the non-CAD group, the levels of plasma tumor necrosis factor-α (TNF-α) and interleukin-6 (IL-6) were higher in CAD group, while plasma adiponectin levels were significantly lower (P<0.05). (3) The levels of plasma matrix metallopeptidase-9 (MMP-9), pregnancy associated plasma protein-A (PAPP-A), and leptin in the vulnerable plaque group were significantly higher than those of the stable plaque group, while C1q/TNF-related protein-9 (CTRP-9) levels were lower (P<0.05). (4) EFVs in the CAD group were higher than those of the non-CAD, and EFVs in the vulnerable plaque group were higher than those of the stable plaque group (P<0.05). (5) EFVs were positively correlated with plasma TNF-α, IL-6, soluble P-selectin (sP-selectin), MMP-9, PAPP-A, and leptin levels, and adiponectin and CTRP-9 were demonstrated negative correlations (P<0.05); however, when normalized to BMI, the correlation between EFV and TNF-α, IL-6, and sP-selectin levels weakened (P>0.05).
Conclusions: EFV and the levels of plasma TNF-α, IL-6, MMP-9, PAPP-A, and leptin are associated with CAD and the stability of plaque, while plasma adiponectin and CTRP-9 have found to confer protection against CAD and plaque. EFVs were positively correlated with plasma MMP-9, PAPP-A, and leptin, while plasma CTRP-9 and adiponectin exhibited negative correlations. Both EFV and plasma inflammatory cytokine levels were shown to effect CAD severity and plaque stability.

GW25-e1561

Clinical value of cardiac hybrid SPECT/CTA imaging on management strategies in CAD

Dong Wei, Wang Qian
Nuclear Medicine, Capital Medical University affiliated Beijing Anzhen Hospital

Objectives: Cardiac hybrid imaging helps improve the diagnostic accuracy of coronary artery disease (CAD) and provides important, comprehensive information necessary for timely and appropriate treatment. We aimed at assessing the potential value of cardiac hybrid imaging on the selection of appropriate management strategy for CAD.
Methods: 238 patients underwent two day stress/rest ^{99m}Tc-MIBI single-photo emission computed tomography (SPECT) and coronary computed tomography angiography (CCTA) on a separate scanner for CAD evaluation prior to treatment. Patients were divided into 3 groups according to the findings by hybrid SPECT and CCTA: (1) both CCTA and SPECT results were abnormal, meanwhile the stenoses found by CCTA and the ischemic myocardium found by SPECT matched well; (2) SPECT and CCTA findings did not match; and (3) both SPECT and CCTA results were normal. According to the hybrid imaging results, 4 types of treatment decisions were made listed as following: (1) no therapy; (2) optimal medical treatment (OMT); (3) percutaneous coronary intervention (PCI); and (4) coronary artery bypass grafting (CABG). Follow-up was performed during the first 60 days after hybrid imaging.
Results: Hybrid images revealed matched, unmatched, and normal findings in 66, 106, and 66 patients. The Invasive Coronary Angiography (ICA) rate within 60 days was 64% (42/66), 9% (10/106) and 0% (0/66) for matched, unmatched and normal findings, respectively. And revascularization rate was 51.5% (34/66), 0% (0/106) and 0% (0/66) for matched, unmatched and normal findings, respectively.
Conclusions: The incremental value of hybrid cardiac imaging resides in the accurate spatial co-localization of myocardial perfusion defects and subtending coronary arteries. So it may facilitate the identification of haemodynamically significant coronary artery stenoses and thereby guide clinicians on the appropriate treatment strategy for CAD.

GW25-e2200

Blood neopterin and endothelin levels in patients with coronary heart disease

Zhu Zhijun, Wu Danning
the 117th Hospital of PLA

Objectives: To investigate the serum neopterin and endothelin levels in patients with coronary heart disease (CHD), to implore the probable mechanism of immune and endothelium function in CHD.
Methods: The levels of neopterin and endothelin in 56 persons who were divided into two group, (control group, n=16) and (patient group, n=40) confirmed by coronary angiography, were measured. The relationship between the levels of neopterin, endothelin and the number of narrow artery in coronary heart disease patients was analyzed.
Results: The levels of neopterin in patients was higher than that in control group (respectively 15.16±7.44 nmol/L and 8.38±4.69 nmol/L, P<0.01). It got more higher with the number of diseased coronary artery in patients got more (r= 0.378 P< 0.05). The levels of endothelin in patients was higher than that in control group (respectively 93.41±27.33 μg/L and 67.58±20.04 μg/L, P<0.01). But it got not higher with the number of diseased coronary artery in patients got more (r= 0.298, P> 0.05). The levels of neopterin got much higher with the levels of endothelin increased. There was a positive relationship between neopterin and endothelin levels in the patients (r= 0.350, P <0.05).
Conclusions: Neopterin and immune may take part in the pathophysiological process of CHD and they also affect the endothelium function.

GW25-e4543

The relationship of thyroid function and the severity of coronary artery in patients with coronary artery disease

Xue Chao, Bian Ling
Shanghai Ninth People's Hospital, Shanghai Jiaotong University School of Medicine

Objectives: To evaluate thyroid function in hospitalized patients with coronary heart condition (CAD) and to explore and the relationship between free thyroxine (FT3) level and the severity of coronary artery stenosis in CAD patients.
Methods: A total of 238 CAD patients who were admitted into our hospital during 2012 to 2014 were selected to perform serum thyroxine levels. The first purpose was to explore the thyroid function in patients with coronary heart disease. Then patients with hyperthyroidism, hypothyroidism, subclinical hyperthyroidism and subclinical hypothyroidism were excluded, the remaining patients were divided into normal FT3 group and low FT3 group according to FT3 levels. The second purpose was to compare the general clinical condition and the severity of coronary artery in the two groups of patients.
Results: (1) Among 238 CAD patients, 2 cases with hyperthyroidism (0.84%), 11 cases with hypothyroidism (4.62%), 3 cases with subclinical hyperthyroidism (1.26%), 5 cases with subclinical hypothyroidism (2.10%), and 25 cases with low T3 syndrome (10.50%). Low T3 syndrome is most common thyroid dysfunction in patients with CAD. (2) Patients with low FT3 had higher level of total cholesterol (TC) and apolipoprotein E (ApoE) than normal FT3 group (P≤0.005), meanwhile they also had higher level of creatinine (P=0.007) and NT-proBNP (P<0.001) than normal FT3 group. (3) Low FT3 patients had higher proportion of three-vessel disease than normal FT3 group (P <0.001).
Conclusions: The low T3 syndrome is most common thyroid dysfunction in patients with coronary heart disease, and patients with low FT3 are more likely to multi-vessel involvement.

GW25-e5211

The relationship between serum TNF-α and sICAM levels and the severity of coronary artery diseases

Zhang Xingtong, Huang Dayang, Wang Miao, Zhao Juan
First Affiliated hospital of Harbin Medical University